

## الدكتور المدرس يسرى كريم جابر الهلالي

- دكتوراه في الكيمياء الحياتية التحليلية من جامعة سسكس / بريطانيا ٢٠١٤
- زميلة الاكاديمية البريطانية للتعليم العالي
- عضو في العديد من المنظمات والمؤسسات العلمية والتربوية والثقافية ومنها الجمعية الملكية البريطانية لعلوم الحياة والجمعية الاوربية للكيمياء الحياتية
- شاركت في عدد كبير من المؤتمرات والندوات العلمية الداخلية والخارجية
- مقيم علمي في العديد من المجالات العالمية الرصينة ضمن مستويات سكوبس وكلايفيت
- عضو هيئة تحرير في المجلة العراقية للنانو تكنولوجي
- حاصلة على العديد من الجوائز العلمية ومنها جائزة العلوم للبحث ذو اعلى معامل تأثير
- لدي العديد من البحوث العلمية المنشورة في مجلات عالمية رصينة مصنفة ضمن كلايفيت و Nature.

# Dr Youssra Kareem Al-Hilaly (MRSB)

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**POSITION:** Teaching and research Lecturer

**SPECIALISATION:** Biochemistry, Structural biology and Biophysics

**LANGUAGES:** Arabic and English

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## ACADMIC QULAIIFICATIONS

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University	Degree	Year	Subject
Mustansiriyah University, Iraq	BSc (First class)	2000	Chemistry
Mustansiriyah University, Iraq	MSc	2003	Clinical Biochemistry
University of Sussex, UK	PhD	2014	Biochemistry and structural biology
University of Sussex, UK	Postdoctoral research fellow	2015	Biochemistry, Biophysics, Neuroscience, and Structural biology

## ATTENDED WORKSHOPS AND COURSES

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1. Circular and linear dichroism course at Warwick University, UK, 2011
2. QA Level 2 Award in Emergency First Aid at Work (QCF), Posturite Ltd. 2015
3. Creating Moments of Joy for People with Alzheimer's course, Purdue university and Purdue university press, USA, 2018
4. Working safely course, Institution of Occupational Safety and Health, UK, 2018
5. Publons Academy Practical Peer Review course, online course, 2020
6. Certified peer reviewer course, Research Academy, Elsevier, 2020
7. Journal Selection Process, Clarivate Analytics company, 2020
8. Structuring your manuscript to impress journal editors, by editage, 2020

## EXTERNAL VISIBILITY

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I am a reviewer in many scientific peers reviewed international journals, for example:

1. Analyst, Royal society of Chemistry.
2. Nature Communication, Nature.
3. Scientific reports, Nature.
4. PLOS ONE, Public Library of Science.
5. Journal of Molecular Biology, Elsevier.
6. Many journals in MDPI, including IJMB, Biomolecules, Brain Sciences, and Biomedicines.
7. Iraqi journal for nanotechnology.

- I am editor in Iraqi journal for nanotechnology.

## MEMBERSHIPS AND NETWORKS

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1. Alzheimer Research UK south coast network membership since 2012
2. Member of Dementia research group, University of Sussex since 2013
3. Alzheimer's society UK membership since 2013
4. AD/PD™ Network, The online community for all neurodegenerative disease professionals, since July 2017
5. Member of Athena SWAN SAT, University of Sussex, UK since 2017
6. Member of Biochemical society since First of April 2018
7. Dementia Researcher A network for early career researchers, National Hospital For Neurology & Neurosurgery, Queen Square, London, WC1N 3BG, since 12<sup>th</sup> April 2018
8. Member of Middle East Molecular Biology Sources (MEMBS) since 1<sup>st</sup> June 2018
9. Member of Royal Society of Biology (RSB) since 1<sup>ST</sup> October 2018
10. Member of Organization for Women in Science for the Developing World (OWSD), since 19<sup>th</sup> December 2018
11. Associate Fellow of the Higher Education Academy, UK

## CONFERENCES AND SYMPOISUMS

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I have attended and participated in many conferences internally and internationally:

1. School of Science Conference, Mustansiriyah University, Baghdad, Iraq	2002	Attendance
2. Ageing Research Symposium, Brighton, UK	31 <sup>st</sup> October 2011	Poster
3. Alzheimer's Research UK Conference, Birmingham, UK	27-28 <sup>th</sup> March 2012	Poster
4. Alzheimer's Research UK Conference in Belfast, UK	11-12 <sup>th</sup> March 2013	Poster
5. The Biochemistry and Molecular Biology research meeting at the Holiday Inn, Brighton, UK	8 <sup>th</sup> May 2013	Talk
6. Protein misfolding in disease: molecular processes and translational research toward therapy, Roscoff, France	13-17 April 2013	Poster
7. Alzheimer's Research UK Conference, Oxford, UK	25-26 <sup>th</sup> March 2014	Poster
8. Biochemistry and Molecular Biology Research Retreat. The Amex, Falmer, UK	15 <sup>th</sup> May 2014	Talk
9. Alzheimer's Research UK Conference, Manchester, UK	16 <sup>th</sup> March 2016	Attendance
10. Alzheimer's disease Mini Symposium. ApoE genotype across the lifespan and as a risk factor for Alzheimer's disease. University of Sussex, UK	10 <sup>th</sup> May 2016	Poster
11. The 2016 Alzheimer's Disease Congress-London, UK	7-9 <sup>th</sup> June 2016	Poster
12. CNRS - Jacques Monod Conference "Protein misfolding in disease - Toxic aggregation-prone proteins in aging and age-related diseases: from structure to pathology and spreading" - Roscoff, France	12-16 <sup>th</sup> September 2016	Poster
13. Alzheimer's Research UK Conference, Aberdeen, UK	14-15 <sup>th</sup> March 2017	Attendance
14. 2 <sup>nd</sup> IFSFMCI, The second conference in forensic and medical in Iraq, Baghdad, Iraq	6-7 <sup>th</sup> Dec 2017	A study Case
15. Annual ARUK South Coast Network Conference, Brighton, UK	18 <sup>th</sup> Dec 2017	Attendance
16. 2 <sup>nd</sup> Euro tau meeting (conference) Lille, France.	26-27 <sup>th</sup> April 2018	Poster
17. Early Career Researcher (ECR) Dementia Symposium at Bramber House Conference Centre, University of Sussex, UK	25 <sup>th</sup> April 2018	Talk and poster
18. Sussex Neuroscience day, University of Sussex, UK	15 <sup>th</sup> May 2018	Attendance
19. ARUK South Coast Network Research Day. Chichester Harbour Hotel and Spa, UK	22 <sup>nd</sup> Jun 2018	Attendance
20. STEM Teachers conference, University of Sussex, UK	28 <sup>th</sup> June 2018	Attendance

21. Biochemistry and Biomedicine Research Retreat - The Amex, Falmer, Brighton, UK.	9th July 2018	Talk
22. I present my work to the CEO of TauRX and senior colleagues at quarterly meetings	2015-2018	Talk
23. Protein disulphide bonds: biochemistry, biotechnology and biomedical impact, Kent. Organised by Biochemistry Society UK	13 <sup>th</sup> August-1 <sup>st</sup> Sep 2018	Talk and poster

## PUBLICATIONS

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### Article

1. Al-Hilaly YK, Williams TL, Stewart-Parker M, Ford L, Skaria E, Cole M, Bucher WG, Morris KL, Sada AA, Thorpe JR, Serpell LC (2013) A central role for dityrosine crosslinking of Amyloid-beta in Alzheimer's disease. *Acta Neuropathol Commun* 1:83. doi:10.1186/2051-5960-1-83
2. Al-Hilaly YK, Biasetti L, Blakeman BJ, Pollack SJ, Zibae S, Abdul-Sada A, Thorpe JR, Xue WF, Serpell LC (2016) The involvement of dityrosine crosslinking in alpha-synuclein assembly and deposition in Lewy Bodies in Parkinson's disease. *Sci Rep* 6:39171. doi:10.1038/srep39171
3. Bukar Maina M, Al-Hilaly YK, Serpell LC (2016) Nuclear Tau and Its Potential Role in Alzheimer's Disease. *Biomolecules* 6 (1):9. doi:10.3390/biom6010009
4. Marshall KE, Vadukul DM, Dahal L, Theisen A, Fowler MW, Al-Hilaly Y, Ford L, Kemenes G, Day IJ, Staras K, Serpell LC (2016) A critical role for the self-assembly of Amyloid-beta1-42 in neurodegeneration. *Sci Rep* 6:30182. doi:10.1038/srep30182
5. Al-Hilaly YK, Pollack SJ, Vadukul DM, Citossi F, Rickard JE, Simpson M, Storey JMD, Harrington CR, Wischik CM, Serpell LC (2017) Alzheimer's Disease-like Paired Helical Filament Assembly from Truncated Tau Protein Is Independent of Disulfide Crosslinking. *J Mol Biol* 429 (23):3650-3665. doi:10.1016/j.jmb.2017.09.007
6. Al-Hilaly YK, Pollack SJ, Rickard JE, Simpson M, Raulin AC, Baddeley T, Schellenberger P, Storey JMD, Harrington CR, Wischik CM, Serpell LC (2018) Cysteine-Independent Inhibition of Alzheimer's Disease-like Paired Helical Filament Assembly by Leuco-Methylthionium (LMT). *J Mol Biol* 430 (21):4119-4131. doi:10.1016/j.jmb.2018.08.010
7. Al-Hilaly YK, Mohammed AH, Thorpe JR, Serpell LC (2019) The involvement of dityrosine crosslinks in lipofuscin accumulation in Alzheimer's disease. *Journal of Physics: Conference Series* 1294:062107. doi:10.1088/1742-6596/1294/6/062107
8. Fichou Y, Al-Hilaly YK, Devred F, Smet-Nocca C, Tsvetkov PO, Verelst J, Winderickx J, Geukens N, Vanmechelen E, Perrotin A, Serpell L, Hanseeuw BJ, Medina M, Buee L, Landrieu I (2019) The elusive tau molecular structures: can we translate the recent breakthroughs into new targets for intervention? *Acta Neuropathol Commun* 7 (1):31. doi:10.1186/s40478-019-0682-x
9. McAulay K, Dietrich B, Su H, Scott MT, Rogers S, Al-Hilaly YK, Cui H, Serpell LC, Seddon AM, Draper ER, Adams DJ (2019) Using chirality to influence supramolecular gelation. *Chem Sci* 10 (33):7801-7806. doi:10.1039/c9sc02239b
10. Raulin AC, Kraft L, Al-Hilaly YK, Xue WF, McGeehan JE, Atack JR, Serpell L (2019) The Molecular Basis for Apolipoprotein E4 as the Major Risk Factor for Late-Onset Alzheimer's Disease. *J Mol Biol* 431 (12):2248-2265. doi:10.1016/j.jmb.2019.04.019

11. Ruiz-Zamora RA, Guillaume S, Al-Hilaly YK, Al-Garawi Z, Rodriguez-Alvarez FJ, Zavala-Padilla G, Perez-Carreón JI, Rodríguez-Ambríz SL, Herrera GA, Becerril-Lujan B, Ochoa-Leyva A, Melendez-Zajgla J, Serpell L, Del Pozo-Yauner L (2019) The CDR1 and Other Regions of Immunoglobulin Light Chains are Hot Spots for Amyloid Aggregation. *Sci Rep* 9 (1):3123. doi:10.1038/s41598-019-39781-3

12. Sampani SI, Al-Hilaly YK, Malik S, Serpell LC, Kostakis GE (2019) Zinc-dysprosium functionalized amyloid fibrils. *Dalton Trans* 48 (41):15371-15375. doi:10.1039/c9dt01134j

13. Al-Hilaly YK, Foster BE, Biasetti L, Lutter L, Pollack SJ, Rickard JE, Storey JMD, Harrington CR, Xue WF, Wischik CM, Serpell LC (2020) Tau (297-391) forms filaments that structurally mimic the core of paired helical filaments in Alzheimer's disease brain. *FEBS Lett* 594 (5):944-950. doi:10.1002/1873-3468.13675

14. Maina MB, Burra G, Al-Hilaly YK, Mengham K, Fennell K, Serpell LC (2020) Metal- and UV-Catalyzed Oxidation Results in Trapped Amyloid-beta Intermediates Revealing that Self-Assembly Is Required for Abeta-Induced Cytotoxicity. *iScience* 23 (10):101537. doi:10.1016/j.isci.2020.101537

15. Oakley SS, Maina MB, Marshall KE, Al-Hilaly YK, Harrington CR, Wischik CM, Serpell LC (2020) Tau Filament Self-Assembly and Structure: Tau as a Therapeutic Target. *Front Neurol* 11:590754. doi:10.3389/fneur.2020.590754

16. Pollack SJ, Trigg J, Khanom T, Biasetti L, Marshall KE, Al-Hilaly YK, Rickard JE, Harrington CR, Wischik CM, Serpell LC (2020) Paired Helical Filament-Forming Region of Tau (297-391) Influences Endogenous Tau Protein and Accumulates in Acidic Compartments in Human Neuronal Cells. *J Mol Biol* 432 (17):4891-4907. doi:10.1016/j.jmb.2020.05.027

17. Maina MB, Al-Hilaly YK, Burra G, Rickard JE, Harrington CR, Wischik CM, Serpell LC (2021) Oxidative Stress Conditions Result in Trapping of PHF-Core Tau (297-391) Intermediates. *Cells* 10 (3). doi:10.3390/cells10030703

### **Book Section**

Vadukul, Devekee M, Al-Hilaly, Youssra K and Serpell, Louise C (2018) *Methods for structural analysis of amyloid fibrils in misfolding diseases*. In: Gomes, Cláudio M (ed.) Protein misfolding diseases. Humana Press, New York, NY, pp. 109-122. ISBN 9781493988198

### **Thesis**

Al-Hilaly, Youssra Kareem (2014) *Chemical and biochemical studies of dityrosine cross-link formation in amyloidogenic peptides*. Doctoral thesis (PhD), University of Sussex.

### **MSc dissertation**

Al-Hilaly, Youssra Kareem (2003) *Isolation and kinetic study of AChE enzyme in brains from patients with glioma tumors*.